AMENDMENTS TO THE CLAIMS

(IN FORMAT COMPLIANT WITH THE REVISED 37 CFR 1.121)

Please cancel claims 7, 9 and 13-15 without prejudice. Please add new claims 21-25.

1. (CURRENTLY AMENDED) An apparatus comprising:

a ~~microcontroller~~ communication engine configured to (i) ~~send or receive~~ transfer normal data over one or more data lines when in a first mode and (ii) ~~be programmed through~~ receive programming data over said data lines when in a second mode; and

a programming circuit configured to (i) receive said program data from said communication engine and (ii) write said program data to a memory.

2. (CURRENTLY AMENDED) The apparatus according to claim 1, wherein said ~~microcontroller~~ memory is further configured to be programmed at a final test stage.

3. (CURRENTLY AMENDED) The apparatus according to claim 2, wherein said ~~microcontroller~~ memory is further configured to be re-programmed after said final test stage.

4. (CURRENTLY AMENDED) The apparatus according to claim 2, wherein said ~~microcontroller~~ memory is configured to be programmed with dedicated test or calibration programs which are over written at said final stage.

5. (CURRENTLY AMENDED) The apparatus according to claim 1, wherein said ~~microcontroller~~ said data lines comprises a universal serial bus ~~microcontroller~~.

6. (CURRENTLY AMENDED) The apparatus according to claim 1, wherein said ~~input pins~~ data lines are configured as (i) a serial shift register clock line and (ii) at least one input line for said program data ~~inputs~~.

7. (CANCELED)

8. (CURRENTLY AMENDED) The apparatus according to claim 1, wherein said ~~microcontroller~~ memory is configured to be programmed with calibration coefficients during manufacturing or testing.

9. (CANCELED)

10. (CURRENTLY AMENDED) An apparatus comprising:

means for operating a microcontroller to ~~send or receive~~ (i) transfer normal data through one or more data lines when in a first mode, transfer said normal data through said data lines in a second mode in response to an assertion of an enable signal and (iii) enter a third mode in response to receiving a token through said data lines; and

means for programming said microcontroller through said data lines when in ~~a second~~ said third mode.

11. (CURRENTLY AMENDED) A method for programming microcontrollers, comprising the steps of:

(A) ~~sending or receiving~~ transferring normal data through one or more data lines when in a first mode; ~~and~~

(B) transferring said normal data through said data lines when in a second mode in response to receiving an enable signal;

(C) entering a third mode in response to receiving a token through said data lines; and

(D) programming said microcontroller through said data lines when in ~~a second~~ said third mode.

12. (CURRENTLY AMENDED) The method according to claim 11, wherein step (B) further comprises:

determining ~~if~~ that a programming state is enabled.

13. (CANCELED)

14. (CANCELED)

15. (CANCELED)

16. (CURRENTLY AMENDED) The method according to claim 11, wherein said ~~second~~ third mode comprises a programmable state.

17. (CURRENTLY AMENDED) The method according to claim 11, wherein ~~step (B) is further responsive to~~ said enable signal comprises a programming voltage.

18. (CURRENTLY AMENDED) The method according to claim 11, wherein said data lines comprise ~~communication lines~~ a Universal Serial Bus.

19. (CURRENTLY AMENDED) The method according to claim 11, wherein step ~~(B)~~ (D) further comprises:

re-programming said microcontroller.

20. (CURRENTLY AMENDED) The method according to claim 19, wherein step ~~(B)~~ (D) further comprises:

programming said microcontroller at a final test stage; and

re-programming said microcontroller after said final test stage.

21. (NEW) The apparatus according to claim 1, wherein said programming circuit comprises an input configured to receive an enable signal to alternatively enable and disable writing to said memory.

22. (NEW) The apparatus according to claim 1, wherein said programming circuit is further configured to transfer read data from said memory to said communication engine.

23. (NEW) The method according to claim 11, wherein step (D) comprises:

transferring programming data from said data lines through a first circuit to a second circuit.

24. (NEW) The method according to claim 23, wherein step (D) further comprises:

writing said programming data from said second circuit to a memory.

25. (NEW) The method according to claim 11, wherein said enable signal is a K state of a Universal Serial Bus at power-up of said microcontroller.